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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,986	03/24/2004	Ronald M. Willett	HES 2003-IP-013013U1	4459
29920	7590	08/31/2006	EXAMINER	
JOHN W. WUSTENBERG P.O. BOX 1431 DUNCAN, OK 73536			SMITH, MATTHEW J	
			ART UNIT	PAPER NUMBER
			3672	

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/807,986	WILLETT ET AL.	
	Examiner	Art Unit	
	Matthew J. Smith	3672	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 7-26 and 29-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 54-60 and 65-67 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12, 14, 15, 17-26, 29-34, 37, 38, 40, 42-46, 48, 51-53 and 61-63 is/are rejected.
- 7) ☒ Claim(s) 13, 16, 35, 36, 39, 41, 47, 49, 50, and 64 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).\*

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 40, 42-44, 48, 51, and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Tolman et al. (6543538).

Tolman et al. disclose a method of completing a well (Fig. 17) comprising: perforating a first zone in the subterranean formation by injecting a pressurized, abrasive-solid containing fluid (col. 16, line 63) through a hydrajetting tool 410 into the formation to form perforation tunnels and openings (col. 17, lines 15-16); injecting a fracturing fluid (col. 17, line 16) into the perforation tunnels so as to create fractures along the perforation tunnels adjacent the wellbore; moving the tool to a second zone (col. 11, lines 16-31) before or during plugging; propagating the fracture (col. 17, line 28); at least partially plugging the fractures and openings in the first zone (col. 17, line 23; col. 18, line 11) with an isolation fluid (col. 18, lines 30-33); repeating the perforating, fracturing, and moving steps to a second zone of the subterranean formation (fig. 17); injecting the fracturing fluid into the first and second zones by the hydrajetting tool; fracturing a horizontal or deviated portion wellbore (col. 17, line 66); the hydrajetting tool kept stationary during the perforating step; cuttings left in the

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annulus from the perforating step pumped into the fracture during the additional pumping step (since the cuttings are not disclosed as being removed, this step is considered inherent); injecting an acidizing fluid (col. 6, line 65) into the fractures; and pumping nitrogen (col. 23, line 45) to flush out the wellbore.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 7-12, 17-21, 24-26, 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tolman et al. in view of Bullen (3664422)

Tolman et al. disclose a method of completing a well (Fig. 17) comprising: perforating a first zone in the subterranean formation by injecting a pressurized, abrasive-solid containing fluid (col. 16, line 63) through a hydrajetting tool 410 into the formation to form perforation tunnels and openings (col. 17, line 15); injecting a fracturing fluid (col. 17, line 16) into the perforation tunnels so as to create fractures along the perforation tunnels adjacent the wellbore; moving the tool to a second zone (col. 11, lines 16-31) before or during plugging; at least partially plugging the fractures and openings in the first zone (col. 17, line 23; col. 18, line 11) with an isolation fluid

(col. 18, lines 30-33); repeating the perforating, fracturing, and moving steps to a second zone of the subterranean formation (fig. 17); the isolation fluid is a ceramic proppant, resin, or cross-linked gel (col. 18, lines 30-33); the hydrajetting tool kept stationary during the perforating step; each fracture having an opening (Fig. 17); injecting the fracturing fluid into the first and second zones by the hydrajetting tool (col. 17, lines 19-21), which injects the fluid into the zones at a pressure above that required to fracture the formation (col. 17, line 20); moving the hydrajetting tool to the second zone after plugging is performed (col. 18, line 11); the hydrajetting tool kept stationary during the perforating step; and injecting an acidizing fluid (col. 6, line 65) into the fractures but not plugging fractures with an enhancing isolation fluid and injecting acidizing fluid to maintain conductivity.

Bullen describe plugging fractures and openings with an enhancing isolation fluid (col. 2, lines 19-22).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use an enhancing isolation fluid in the Tolman et al. method, as described by Bullen in order to stimulate the well with little reservoir contamination and a high percentage of load fluid recovery (Bullen, col. 2, lines 10-13).

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tolman et al. in view of Bullen as applied to claim 1 above, and further in view of Hill (3712379).

The combination discloses the using an enhancing isolation fluid in a completion method plus injecting an acidizing fluid into the fractures, so as to etch the one or more fractures and thereby maintain conductivity within the fractures at a later time but not injecting fluid into a formation at a pressure above the fracture pressure.

Hill discusses injecting fluid into a formation at a pressure above the fracture pressure (col. 4, line 10).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to injecting fluid into a formation at a pressure above the fracture pressure, as discussed by Hill, in order to create more than one vertical fracture in an interval (Hill, col. 3, lines 6-7).

Claims 14, 15, 37, 38, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tolman et al. in view of Bullen as applied to claim 1, 24, and 40, respectively above, and further in view of Montgomery (6070666).

The combination discloses the using an enhancing isolation fluid in a completion method plus injecting an acidizing fluid into the fractures, so as to etch the one or more fractures and thereby maintain conductivity within the fractures at a later time but not

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pumping enough fracturing fluid to plug the fractures or removing the isolation fluid from the first zone performed by circulating the isolation fluid out of the wellbore and back to the surface after all of the desired fractures have been formed.

Montgomery presents pumping enough fracturing fluid, comprising sand (col. 3, line 42) adhesive resin (col. 4, line 11) and consolidating agent (col. 3, line 51), to plug the fractures (col. 3, lines 37-40) and removing the isolation fluid from the first zone by circulating the isolation fluid out of the wellbore and back to the surface after all of the desired fractures have been formed (col. 5, lines 33-37).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to remove an isolation fluid out of fractures, as presented by Montgomery, in order to produce all the fractured well zones.

Claims 22, 23, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tolman et al. in view of Bullen as applied to claim 1 and 40, respectively above, and further in view of Desbrow (2758653).

The combination discloses the using an enhancing isolation fluid in a completion method but not rotating a hydrajete tool.

Desbrow shows a hydrajete tool 14 that rotates and moves vertically during cutting (col. 5, lines 38-42).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to cut helical and vertical slots to complete the Tolman et al. well, as shown by Desbrow, in order to provide horizontal, vertical, or sloping fractures (col. 2, lines 4-11).

Claims 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tolman et al. in view of Montgomery.

Tolman et al. disclose a method of completion comprising hydrazetting casing and a formation, fracturing one zone, plugging the zone, and moving to another location then repeating the process but not pumping enough fracturing fluid to plug the fractures or removing the isolation fluid from the first zone performed by circulating the isolation fluid out of the wellbore and back to the surface after all of the desired fractures have been formed.

Montgomery presents pumping enough fracturing fluid, comprising sand (col. 3, line 42), adhesive resin (col. 4, line 11), and consolidating agent (col. 3, line 51), to plug fractures (col. 3, lines 37-40) and removing the isolation fluid from the first zone by circulating the isolation fluid out of the wellbore and back to the surface after all of the desired fractures have been formed (col. 5, lines 33-37).



It would have been obvious to a person having ordinary skill in the art at the time the invention was made to remove an isolation fluid out of fractures, as presented by Montgomery, in order to produce all the fractured well zones.

***Allowable Subject Matter***

Claims 54-60 and 65-67 are allowed.

Claims 13, 16, 35, 36, 39, 41, 47, 49, 50, and 64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments, see pages 11-15, filed 30 June 2006, with respect to the rejection of claims 1, 24, 61 under 35 U.S.C. 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new rejection is made in view of Bullen and Hill. Bullen is considered to meet applicants' criteria for an enhancing fluid to maintain conductivity. The examiner contends Tolman et al. disclose solids (col. 16, line 63). The examiner considers Tolman et al. disclosing injecting fracturing fluid with the hydramjetting tool at a pressure above the fracture pressure (col. 17, lines 20-21, "penetrate the first formation

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interval of interest" which inherently fractures the formation) but added Hill since Hill does disclose injecting fracturing fluid at a pressure above the fracture pressure. While removal of the isolation fluid from the first zone is not explicitly stated, one of ordinary skill would recognize to produce any zone, removal of isolation fluid must occur. Thus, specifying a zone or the well is not deemed crucial. As to Tolman et al. not teaching or suggesting plugging the fractures, the examiner counters this argument with the Tolman et al. discussion of zone treatment and ball sealers (col. 18, line 10-26).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nguyen (7017665) depicts hydrojetting a zone of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Smith whose telephone number is 571-272-7034. The examiner can normally be reached on T-F, 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

MJS *MJS*  
25 August 2006